



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# BOTANICAL GAZETTE

JULY, 1894.

---

## Undescribed plants from Guatemala and other Central American Republics.<sup>1</sup> XIII.

JOHN DONNELL SMITH.

WITH PLATES XXIV—XXVI.

**Heisteria Costaricensis** Donnell Smith. (§ LEIOCARPÆ Engl.)—Folia disticha anguste lineari-lanceolata juxta basim acute angustata supra medium sensim in apicem mucrunculatum attenuata, margine adpresse retroflexo, petiolo brevi decurrente. Calyx urceolatus post anthesim retroflexus pedicelli dimidium æquans, dentibus brevibus triangularibus in setam desinentibus. Petala libera obovata ad apicem emarginata calyce sublongiora. Ovarium perianthium paullo superans latior quam longior collo coronatum. Calyx fructiferens coriaceus patulus pentagono-orbicularis cum pedicello brevior sanguineus subtus maculis albis notatus. Drupa ovata-globosa calycis radio brevior atro-cyanea.

A large bush with slender, drooping, and closely leafy branches that are toward their tips flexuose and angulate. Leaves 6–8<sup>in</sup> × 9–11<sup>l</sup>, membranaceous, pellucid-punctulate, glaucescent beneath. Petiole 3–4<sup>l</sup> long, decurrent in narrow wings. Flowers scarcely a line high, apparently solitary. Stamens not seen. In fruit, pedicel 3½–4½<sup>l</sup> long, calyx 10–12<sup>l</sup> in diam. Drupe 5 × 4<sup>l</sup>.—The only other species described, with similarly narrow leaves, *H. salicifolia* Engl. from South Brazil, is distinct by its calyx, which in fruit is cupuliform, deeply lobed, plicate and enclosing the pale drupe.—Forest on Rio Reventazón, Prov. Cartago, Costa Rica, alt. 2,000<sup>ft</sup>, Mch. 1894, J. D. S., (ex Plantis Guatemalensibus necnon Salvadorensibus Hondurensibus Nicaraguensibus Costaricensibus, quas edidit John Donnell Smith, 4,760).

---

<sup>1</sup>The title of these papers, as well as that of the tickets accompanying the distribution of plants, has been changed to the form here employed, in order to include in the series some collections from other parts of Central America.

**Cuphea Heydei** Koehne (inserenda post *C. Liebmannii* Koehne in Engler's Bot. Jahrbüch. 2: 409. 1882. Sect. x. MELVILLA Koehne, subsect. 5. Erythrocalyx Koehne). ICON: Koehne Atlas Lythracearum ined. t. 44. fig. 380.—Fruticulus ramis junioribus dense hispidis vetustioribus glabratiss. Folia internodiis 2–3-plo longiora, basi acuta vel in petiolum 1–4<sup>mm</sup> longum hispidum attenuata, elliptica v. lanceolata (24–54<sup>mm</sup>: 11–17<sup>mm</sup>), longe acuminata, parce ciliata, superiore pagina parce, inferiore in nervis densius hispida, vix rigidula, subtus pallidiora. Flores solitarii; pedicelli axillares 9–20<sup>mm</sup> æquant, parce hispidi, prophylla minutissima, quasi in setas 3–4 dissoluta summo apice gerentes. Calyx (22–26<sup>mm</sup>) calcare orbiculari dilatato subincurvo (fere 3<sup>mm</sup> longo latoque) instructus, subrectus, subgracilis, infra faucem ascendentem valde dilatatam plicatam subangustatus, verisimiliter intense coccineus, infra medium hispidus, intus glaberrimus; lobi brevissimi, setis 4–6 ciliati; appendices lobis longiores, dorso seta valida munitæ. Petala 0 v. duo dorsalia minutissima subulata. Stamina ad tubi  $\frac{4}{5}$  lineæ rectæ inserta; episepala fere  $\frac{1}{3}$  supra tubum exserta; epipetalorum 4 ventralia lobos æquantia, 2 dorsalia paullo breviora et ceteris vix inferius inserta; omnia glaberrima. Stylus glaberrimus, sub anthesi ovarium glaberrimum duplum æquans, demum circ. 8<sup>mm</sup> exsertus. Discus crassus, ovato-cordatus, deflexus, supra sulcatus, subtus convexus. Ovula 9–14.—A *Cuphea Liebmannii* Koehne proxima differt calycibus majoribus appendicibus manifestis seta munitis et præcipue pedicellis axillaribus nec interpetiolaribus.

Nebáj, Depart. Quiché, Guatemala, alt. 7,000<sup>ft</sup>, May 1891, Heyde & Lux, no. 4,480.

IPOMÆA FISTULOSA Mart., var. **Nicaraguensis** Donnell Smith.—Volubilis, foliis cordiformibus acuminatis discoloribus supra pubescentibus subtus cano-velutinis. Sepala pubescentia orbicularia. Corolla ad 3–4-pollicaris. Semina flavo-comosa.

Rio de Las Layas, Depart. Rivas, Nicaragua, alt. 120<sup>ft</sup>, April 1893, Dr. W. C. Shannon, U. S. Army, no. 5,046.

**Salvia Shannoni** Donnell Smith. (§ CALOSPHERE.)—Suffrutex cano-pubescent. Folia ovato-lanceolata sensim acuminata ad basim acuta obtusave serrulata discoloria supra scabriuscula subtus cum petiolis velutina, floralia subconformia contractius acuminata flores superantia. Racemorum

breviter pedunculorum verticillastra coarctata 6-14-flora, infirma subremota. Calycis subsessilis tubuloso-campanulati labia late ovata, posticum integrum anticum acute dentatum. Corolla quam calyx duplo fere longior ad medium subæqualiter labiata, tubo gracili vix ventricoso sub exserto, labii inferioris lobo medio reniformi bifido. Stylus superne unilater aliter fimbriatus.

Leaves  $3-4 \times 1\frac{1}{4}-1\frac{3}{4}$  in, petioles 6-8<sup>l</sup> long. Racemes 3-5 in long; bracts sessile, herbaceous, pubescent, purplish, persistent,  $8-10 \times 4-5$ <sup>l</sup>. Calyx pubescent, virescent or colored, 5<sup>l</sup> long, lips  $1\frac{1}{2}$ <sup>l</sup> long. Corolla blue, 8<sup>l</sup> long, nearly glabrous galea 3<sup>l</sup> long; lip pubescent on back, 4<sup>l</sup> long, middle lobe  $1\frac{1}{2} \times 3$ <sup>l</sup>. Filament produced at articulation; anterior branch of connective  $1\frac{1}{2}$ <sup>l</sup> long, not dilated, glabrous, dentate. Inferior lobe of style  $\frac{1}{2}$ <sup>l</sup> long, the superior thrice longer.—Slopes of Volcan Chingo, Depart. Jutiapa, Guatemala, alt. 3,000<sup>ft</sup>, Oct. 1892, Dr. W. C. Shannon, U. S. Army, no. 3,612.

**Triplaris Macombii** Donnell Smith.—Folia pedalia oblique lateque elliptico-ovata abrupte acuminata ad basim late rotundata glabrata subtus rubro-punctulata, margine pilosiusculo, costa subtus adpresse pilosa. Racemi feminei (qui soli suppetunt) singuli aut bini aut terni ex summis axillis orti itidem in paniculam terminalem folia superantem congesti. Calycis fructiferentis lobi exteriores quam tubus oblongus altero tanto longiores linguiformes, sinuum late rotundatorum marginibus retroflexis, lobi interiores tubum subæquantes eique  $\frac{2}{3}$ -adnati setaceo-subulati ad basim plus minus appendiculati. Nuculæ nitidæ quam tubus  $\frac{1}{3}$  brevioris facies ovatæ, stylis fauces haud attingentibus.

Branchlets smooth, sulcate, verrucose at nodes. Leaves membranaceous, undulate, inequilateral,  $10-13 \times 6-7$  in; caudate acumination blunt, 5<sup>l</sup> long; nervation immersed above, salient beneath, 17-19 lateral nerves straight and uniting in arches remote from margin, reticulation minute, longitudinal impressions nearly obsolete; petiole 8-11<sup>l</sup> long. Panicle densely flavo-sericeous, rachis flexuose; racemes densely flowered from near base, 8-12 in long; bracts persistent, acuminate-ovate, margins continuing united below, within pluri-nerved and colored; pedicels as long (4<sup>l</sup>), deflexed. Calyx of matured fruit 26<sup>l</sup> long, pale-yellow; tube appressed-villose,  $9 \times 3$ <sup>l</sup>; wings sparsely pilose,  $17 \times 5$ <sup>l</sup>, obtuse, narrowed toward base; interior lobes somewhat unequal, about 3<sup>l</sup> long.



Nutlet  $5 \times 3\frac{1}{2}$ , styles  $2^1$  long.—Most nearly related to *T. auriculata* Meisn. and *T. Arnottiana* Meisn., the originals of which in the Meisner herbarium of Columbia College have been compared.—Jiquilisco, Depart. Usulután, Salvador, alt. 220<sup>ft</sup>, Jan. 1893, Dr. W. C. Shannon, U. S. A., no. 5,064. Named for Lieut. M. M. Macomb, U. S. Army, Engineer in Charge, Corps no. 1, Intercontinental Railway Commission.

**Piper flavidum** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; (§ III. STEFFENSIA C. DC.); foliis brevissime petiolatis linearilanceolatis basi æquali acutis apice acute acuminatis mucronulatisque utrinque glabris, nervo centrali circiter ad  $\frac{1}{4}$  longitudinis nervos utrinque 3 alternos adscendentes mittente, petiolo glabro basi ima vaginante, pedunculo glabro petiolum superante, amento florente folii dimidium æquante, bracteæ vertice triangulari margine flavide hirsuto, bacca subtetragona apice subtiliter flavide hirtella.—Ramuli glabri internodiis brevibus, corticis collenchymate continuo zona fibrosa continua intus aucto, fasciculis intramedullaribus 2-seriatis. Limbi 8<sup>cm</sup> longi 13<sup>mm</sup> lati in sicco firmuli flavicantesque. Petioli ad 2<sup>mm</sup> longi. Pedunculi 6<sup>mm</sup> longi. Amentia florentia 3<sup>mm</sup> crassa. Stamina 4.

Barranca de Rubelcruz, Depart. Alta Verapaz, Guatemala, alt. 2,500<sup>ft</sup>, Apr. 1889, J. D. S., no. 1,744.

**Piper Tuerckheimii** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 96; (§ III. STEFFENSIA C. DC.); foliis modice petiolatis, limbis 3<sup>cm</sup> supra basin peltatis oblongo-ovatis basi rotundatis leviterque repandis apice acute acuminatis supra glabris subtus præsertim ad nervos hirtellis, nervo centrali circiter ad  $\frac{1}{2}$  longitudinis nervos utrinque 3 oppositos adscendentes mittente, lateralibus 4–5 e basi solutis tenuibus, amento quam folium pluries brevius apice longe mucronato, pedunculo quam petiolus pluries brevius, bracteæ apice truncato-peltatæ pelta triangulari margine hirtella, bacca subglobosa vertice hirsuta.—Ramuli dense hirtelli. Limbi ad 24<sup>cm</sup> longi ad 12<sup>cm</sup> lati. Petioli 4.5<sup>cm</sup> longi hirtelli basi vaginantes. Pedunculi 8<sup>mm</sup> longi hirtelli. Amenti pars baccifera 5<sup>cm</sup> longa mucro 2<sup>cm</sup> longus hirtellus. Stamina 4.

Pansamalá forest, Depart. Alta Verapaz, Guatemala, alt. 3,800<sup>ft</sup>, Aug. 1886, von Tuerckheim, no. 1,038.

**Piper Santa-rosanum** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 96; (§ STEFFENSIA C. DC.); foliis modice petiolatis

oblique rotundato-ovatis basi inæquali rotundatis subcordatisque apice obtusiuscule acuminatis utrinque dense velutinis 7-nerviis nervis 5 medianis validioribus, petiolo dense velutino basi ima vaginante, amento baccifero limbum æquante, pedunculo petiolum parum superante velutino, bractea spathulata apice rotundata utrinque et præsertim dorso hirsuta, ovario hirtello, bacca globoso-ovata hirtella.—Frutex 3–4<sup>m</sup> altus. Ramuli dense velutini, cortex fasciculis collenchymateis discretis instructus fibris destitutus, fasciculi intramedullares uniseriati. Folia in sicco subrubrescentia. Limbi in sicco firmi circiter 12<sup>cm</sup> longi 7.5<sup>cm</sup> lati. Petioli 1<sup>cm</sup> longi. Amenta baccifera 3<sup>mm</sup> crassa. Stamina 4, antheræ reniformi-globosæ caducæ filamentis circiter æquilongæ.

River-bank near Santa Rosa, Depart. Baja Verapaz, Guatemala, alt. 5,000<sup>ft</sup>, Apr. 1887, von Türckheim, no. 1, 174, distributed as *P. patulum* Bertol.; Santa Rosa, Depart. Santa Rosa, Guatemala, alt. 4,000<sup>ft</sup>, May 1892 and Nov. 1892, Heyde & Lux, nos. 3,463 and 3,833; Capetillo, Depart. Zacatepequez, Guatemala, alt. 4,300<sup>ft</sup>, Mch. 1892, J. D. S., no. 3, 590.

**Piper variable** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; (§ IV. CARPUNYA C. DC.); foliis modice petiolatis late ovatis basi truncato-rotundatis vel elliptico-ovatis basi subacutis omnibus apice acuminatis utrinque glabris, nervo centrali nervos ad  $\frac{2}{3}$  longitudinis utrinque circiter 5 sursumque nervulos validos mittente, petiolo glabro basi ima vaginante, amento folium subæquante pedunculo quam petiolus paulo brevior, bractæ vertice glabro triangulari superne breviter acutato unde subquadrangulari pedicelloque basi hirsuto, bacca obpyramidato-trigona glabra.—Ramuli glabri. Limbi in sicco subcoriacei opaci fusciscentes late elliptici 16.5<sup>cm</sup> longi 12.5<sup>cm</sup> lati, elliptico-ovati 16<sup>cm</sup> longi 8.5<sup>cm</sup> lati. Petioli 1.5<sup>cm</sup> longi. Amenta baccifera ad 6<sup>mm</sup> crassa. Stamina 3.—Species foliorum forma in ramis amentiferis ipsis valde variabili insignis.

Mountain-forests near Coban, Depart. Alta Verapaz, Guatemala, alt. 4,300<sup>ft</sup>, May 1879, von Türckheim, no. 434.

**Piper Donnell-Smithii** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 95; (§ IV. CARPUNYA C. DC.); foliis breviter petiolatis lanceolatis basi æquali acutis apice longiuscule acute acuminatis utrinque glabris, nervo centrali circiter ad medium nervos utrinque 5 nervulosque validos mittente, peti-

olo basi ima vaginante, pedunculo petiolum æquante, amento quam folium pluries brevior, bracteæ apice truncato-peltatæ vertice triangulari margine hirtello pedicelloque lato hirtello, bacca parce hirtella.—Ramuli glabri tenues, cortex collenchymate proprio destitutus zona fibrosa continua instructus, fasciculi intramedullares sub-2-seriati. Limbi ad 13<sup>cm</sup> longi ad 4<sup>cm</sup> lati, in sicco membranacei nigrescentes opaci. Petioli 7<sup>mm</sup> longi. Amenta submatura ad 4<sup>cm</sup> longa 3<sup>mm</sup> crassa. Stamina 3. Bacca obpyramidato-trigona in sicco nigra.—Species *P. eucalyptifolium* Rudge mire simulans amentis angustioribus ramulis haud uno latere hirtellis et verisimiliter staminum numero ab eo discrepans, a *P. concinno* C. DC. bracteæ pelta hirtella, a *P. Costaricense* C. DC. amentis brevioribus distincta.

Pansamalá, Guatemala, alt. 4,000<sup>ft</sup>, July, 1886, von Türckheim, no. 975.

**Peperomia Cobana** C. DC. in Donnell Smith Enum. Pl. Guat. 2: 66; foliis alternis longiuscule petiolatis lanceolatis utrinque glabris, nervo centrali nervos utrinque 4–5–6 mittente, amentis apice caulis et ramuli axillaris aphylli 3 alternis foliorum limbos circiter æquantibus, ovario basi rhachi impresso apice oblique subulato antice stigmatifero.—Erecta glabra. Limbi ad 13<sup>cm</sup> longi ad 5<sup>cm</sup> lati in sicco subcoriacei opaci nervis ægre cernendis. Petioli ad 3<sup>cm</sup> longi. Ramuli amentiferi pars infera sterilis 9<sup>cm</sup> longa. Amenti pedunculus ad 2<sup>cm</sup> longus. Amentum ipsum circiter 1<sup>mm</sup> crassum. Bractea orbicularis.—Species *P. lancifolia* Hook. proxima petioliis multo longioribus ab ea præcipue discrepans.

Near Coban, Guatemala, alt. 4,600<sup>ft</sup>, June, 1879, von Türckheim, no. 78.

**Peperomia Luxii** C. DC.; foliis quaternis modice petiolatis e basi cuneato-obovatis apice emarginulatis utrinque glabris indistincte 3-nerviis in sicco coriaceis, amentis terminalibus pedunculatis pedunculos suos circiter duplo foliorumque limbos circiter triplo superantibus densifloris, rhachi glabra, bractea orbiculari coriacea centro pedicellata, ovario semiimmerso ovato in stylum gracilem apice stigmatiferum terminato, bacca ovata stylo ea brevior apice mucronata.—Herba procumbens glabra, caule in sicco coriaceo 4-sulcato vix 2<sup>mm</sup> crasso. Limbi opaci circiter 15<sup>mm</sup> longi 8<sup>mm</sup> lati. Petioli circiter 3<sup>mm</sup> longi. Pedunculi 2<sup>cm</sup> longi. Amenta matura ad 5<sup>cm</sup> longa 1<sup>mm</sup> crassa.

Ojo de Agua, Depart. Santa Rosa, Guatemala, alt. 3,500<sup>ft</sup>, Sept., 1892, Heyde & Lux, no. 3,828.

**Phoebe amplifolia** Mez et Donnell Smith; foliis amplissimis, adultis supra glabris nitidisque vel secus nervos adpresse tomentellis, dense nervis immersis areolatis, subtus tomento brevi puberulo, ad nervos ferrugineo mollibus, latissime ellipticis, apice breviter subacuminatis, penninervibus; inflorescentia dense ferrugineo-tomentella, submultiflora, laxiuscule panniculata, foliis multo brevioribus; floribus dense ferrugineo-tomentellis; limbi segmentis æqualibus, subobtusis; filamentis pilosis quam antheræ multo brevioribus; antheris omnibus 4-locellatis; ovario glaberrimo.—Arbuscula videtur (ex ramorum habitu), ramulis crassis, dense adpresseque ferrugineo-tomentellis basin versus cinerascentibus, striatim subangulatis; gemmis dense ferrugineo-tomentosis; cortice esipido, paullo mucoso. Folia petiolis usque ad 32<sup>mm</sup> longis, validissimis, supra profunde canaliculatis, tomento peradpresso brevissimoque adultioribus cinereo obtectis stipitata, sparsa, rigide coriacea, supra (præter nervos adpresse cinereo-tomentellos) adulta saltem glabra nitidaque et dense venulis immersis areolata, subtus tomento brevi puberulo, ad nervos ferrugineo mollia valde prominenti-reticulata, latissime elliptica, basi breviter acuta apice breviter lateque subacuminata, ex specimine nostro usque ad 0.3<sup>m</sup> longa, 0.16<sup>m</sup> lata, costis e nervio medio sub angulo 45–60° prodeuntibus, margine quam maxime recurvato, in statu sicco præsertim basin versus solemniter lateque replicato. Inflorescentia laxiuscule panniculata late subthyrsoidea, dense adpresseque tomento ferrugineo oblecta, foliis permulto brevior; pedicellis sæpius 4<sup>mm</sup> vel paullo infra longis, bracteolis deciduis. Flores dense adpresseque ferrugineo-tomentelli, limbi segmentis quam genitalia multo longioribus, æqualibus, lingulatis, apice subobtusis. Filamenta pilosa quam antheræ multo breviora, ser. III basi glandulis binis magnis, sessilibus aucta. Antheræ subquadraticæ, obtusæ, omnes quatrilocellatæ, locellis ser. II exteriorum introrsum, ser. III sublateraliter dehiscentibus. Staminodia perconspicua filamentis manifesto, piloso stipitata. Ovarium glaberrimum, subglobosum; stylo crasso subæquilongo; stigmate pulvinato. Bacca maxima ( $\pm$  33<sup>mm</sup> longa, 22<sup>mm</sup> diam. metiens), bene ellipsoidea, cupulæ crassæ, subpateriformi, obscure duplicimarginatæ, sensim conice in pedicellum valde incrassatum transeunti insidens.

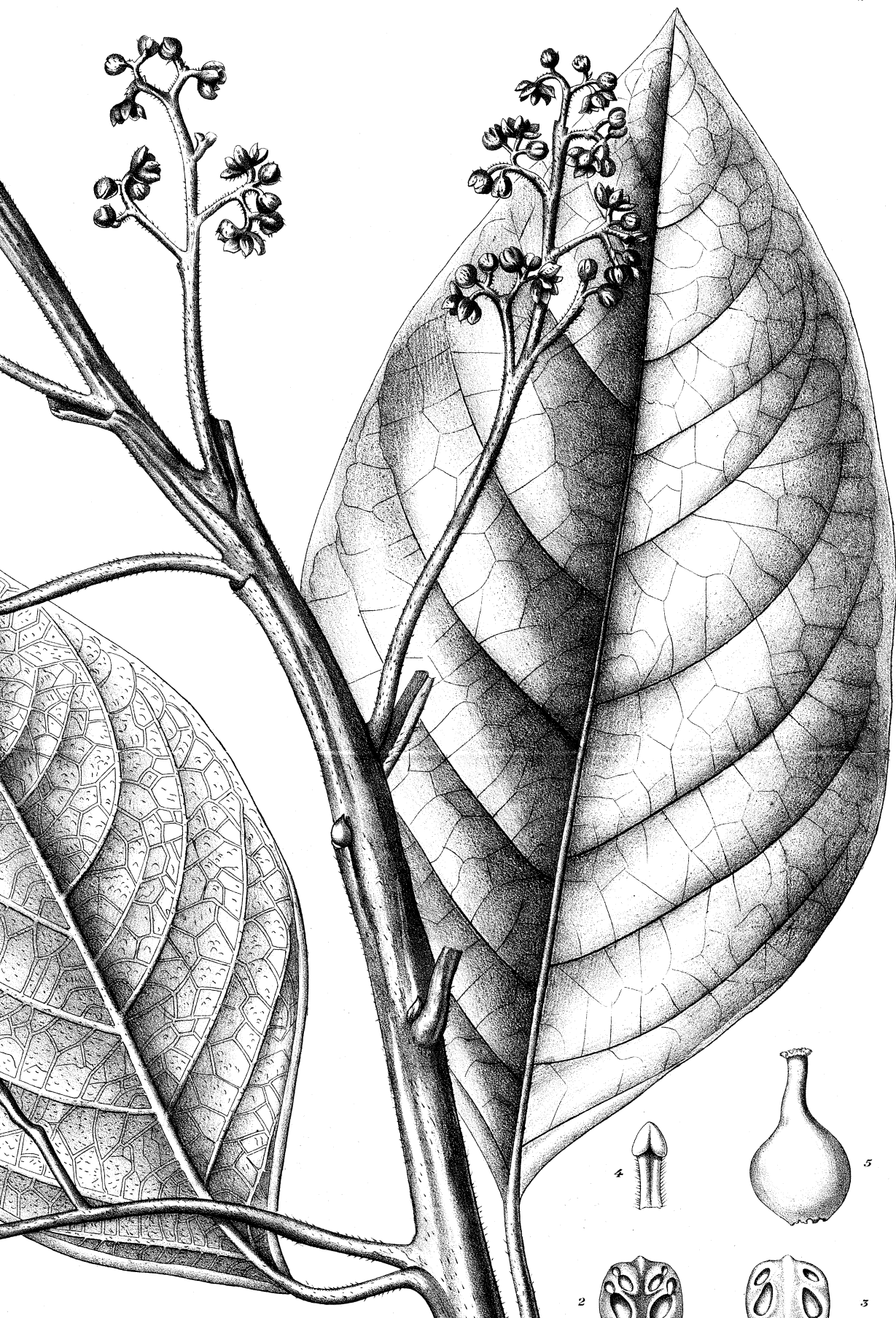
El Jute, Depart. Quiché, Guatemala, alt. 10,000<sup>ft</sup>, Apr. 1892, Heyde et Lux, no. 3,033.

EXPLANATION OF PLATE XXIV.—Fig. 1, flowering and fruiting branch.—Fig. 2, posterior view of stamen ser. 1.—Fig. 3, anterior view of stamen ser. 3, with glands.—Fig. 4, posterior view of stamen ser. 4.—Fig. 5, Pistil. (Fig. 1 is natural size; the others are variously enlarged.)

**Nectandra Heydeana** Mez et Donnell Smith; foliis adultis præter costarum axillas subtus sæpius perconspicue barbellatas glabris, optime ellipticis, basi nunc rotundatis nunc breviter acutis, apice sueto acumine brevi sed eleganti præditis, utrinque valde prominulo-reticulatis; inflorescentia subcorymbosa vel subpyramidata, glaberrima; floribus hermaphroditis, glabris,  $\pm 7^{\text{mm}}$  diam. metientibus; filamentis ser. I, II nullis; ovario glabro, stylo subæquilongo. — Arbuscula 12–24<sup>ped</sup> alta (ex cll. Heyde et Lux!), ramulis glaberrimis, atris vel cinerascentibus, apicem versus lineatim angulosis, gemmis dense sulfureo-strigulosus nonnunquam minute sericantibus, cortice esipido. Folia petiolis usque ad 20<sup>mm</sup> longis (sed sæpius conspicue brevioribus quoque), supra leviter canaliculatis, sub lente primum peradpresse sulfureo-strigulosus demum glabratis stipitata, sparsa, tenuiter membranacea vel membranacea, præter costarum axillas subtus sæpius perconspicue barbellatas glaberrima, utrinque valde prominenti-reticulata supra (sicca) olivacea nitida, subtus minute rubenti-viridia subnitida, optime elliptica, basi sueto rotundata rarius breviter acuta, apice sæpius acumine brevi sed eleganti prædita,  $\pm 0.16^{\text{m}}$  longa, 72<sup>mm</sup> lata, costis e nervio medio sub angulo 50–60° prodeuntibus, margine haud recurvulo, sæpius eleganter undulato. Inflorescentia subpauciflora, subcorymbosa vel subpyramidatim panniculata, glaberrima, foliis brevior; pedicellis longis (sæpius 7<sup>mm</sup> metientibus); bracteolis deciduis. Flores hermaphroditi, glabri,  $\pm 7^{\text{mm}}$  diam. metientes, limbi segmentis patentibus, æqualibus, ellipticis, apice rotundatis. Filamenta ser. I, II desunt; ser. III glabra sed generis ritu papillosa, antheris duplo vel ultra breviora, percrassa, basi glandulis binis minutis, globosis, sessilibus aucta. Antheræ ser. exteriorum suborbiculares, apice bene rotundatæ, papillosæ. Ovarium glabrum, subglobosum, stylo crasso, subæquilongo. Fructus ignotus.

Santa Rosa, Depart. Santa Rosa, Guatemala, alt. 3,000<sup>ft</sup>, Nov. 1892 and Jan. 1893, Heyde et Lux, nos. 4,260 and 4,578.—PLATE XXV.





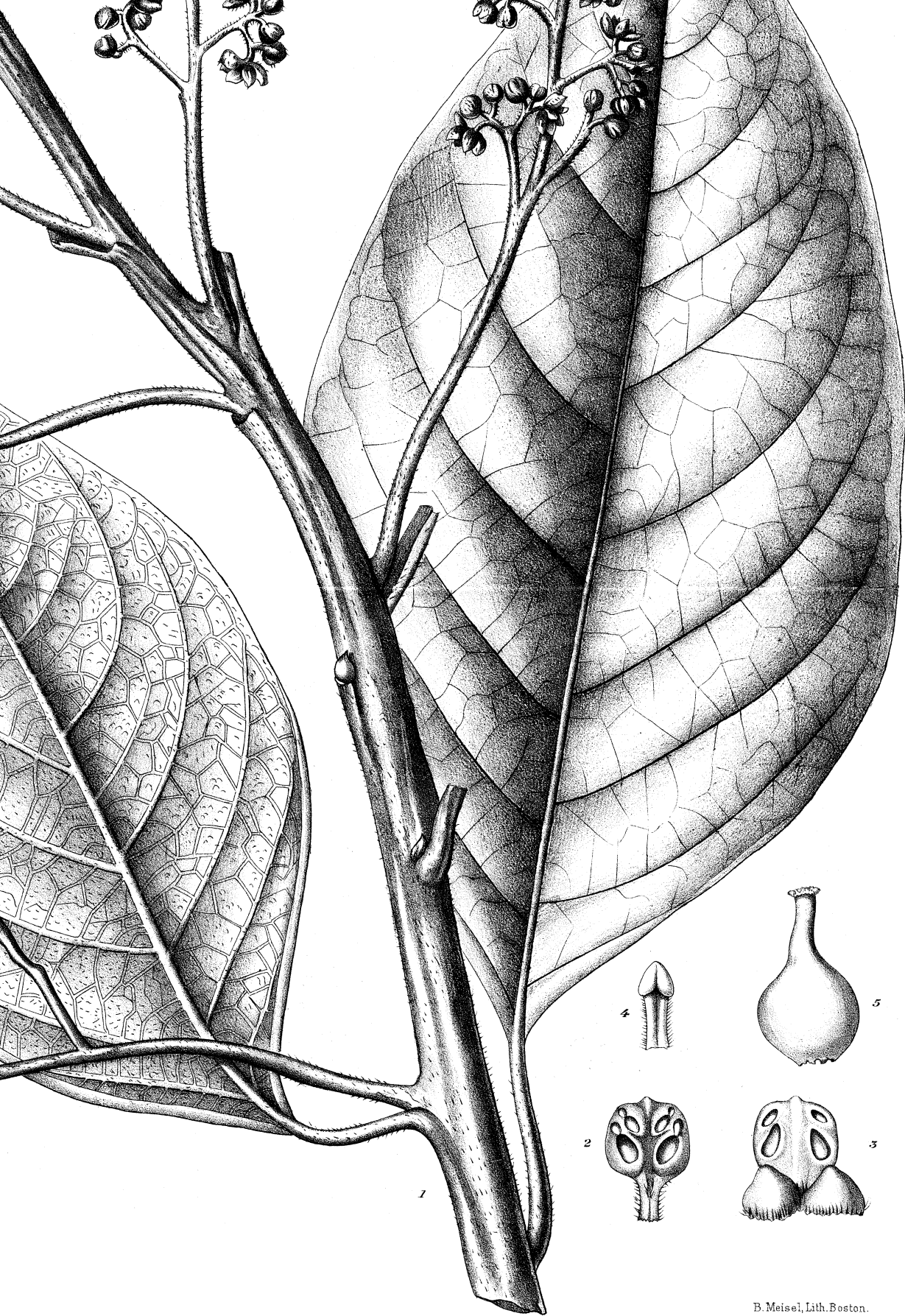




Thea Mez ad sicc. del

PHOEBE AMPLIFOLIA, Mez & Donnell Smith.





PHOEBE AMPLIFOLIA, Mez & Donnell Smith.

B. Meisel, Lith. Boston.







Thea Mez ad. sicc. del.

NECTANDRA HEYDEANA, Mez & Donnell Smith.



NECTANDRA HEYDEANA, Mez & Donnell Smith.

B. Meisel, Lith. Boston.

**Pedilanthus macradenius** Donnell Smith. (§EUPEDILANTHUS Boiss.)—Folia glabra ampla obovato-oblonga angulo obtusissimo terminantia, basi obtusa. Cymæ ex axillis supremis ortæ breves oligocephalæ, bracteis oblongo-ovatis pedunculos superantibus. Involucrum ad basim rectangulare, calcaris quam tubus paullo minoris deflexi glandulas 2 majusculas gerentis labiis ovatis sub apice plica intrusa auctis, tubi lobis binis inferioribus ovatis cano-fimbriatulis superiore cum intermediis aequilongis alte connato. Bracteolæ numerosissimæ flores masculos aequantes, pedicellis masculis et femineo filamentisque glabris. Capsula depresso-sphaerica lineis dehiscentiæ 6 latis albis notata.

Arboreous. Leaves olive-green, at apex of branchlets  $4-6 \times 2-3^{\text{in}}$ ; petioles smooth,  $3^{\text{l}}$  long. Bracts rubescent beneath hoary pubescence,  $6 \times 3^{\text{l}}$ . Peduncles pubescent. Involucre rubescent, smooth within,  $5-6^{\text{l}}$  long, spur  $3\frac{1}{2} \times 2^{\text{l}}$  with oval glands  $1^{\text{l}}$  long, tube  $4 \times 3^{\text{l}}$ . Capsule  $4^{\text{l}}$  in diam., cocci ecarinate, seeds trigonal-globose.—Canival, Depart. Huehuetenango, Guatemala, alt. 3,200<sup>ft</sup>, Dec. 1891, Dr. W. C. Shannon, U. S. Army, no. 412.

**Echmea Friedrichsthali** Mez et Donnell Smith; foliis super vaginam longe paullo angustatis, spinulis minutis armatis vel interioribus saepius fere omnino inermibus; inflorescentia bipinnatim vel imperfecte tripinnatim panniculata, e ramulis distiche florigeris subpatentibus composita, densiuscula subellipsoidea; bracteolis florigeris reflexo-patentibus, latissime ovatis breviterque (nec pungenter) acuminatis, ovarii medium haud attingentibus; floribus ad  $17^{\text{mm}}$  longis, sessilibus; sepalis liberis vel minutissime tantum connatis, apice in aciculum minutissimum (fructiferis saepius deciduum) dorsalem productis; petalis in spinulam terminalem desinentibus, altiuscule ligulatis; filamentis ser. II cum petalis peralte connatis; placentis interno loculorum angulo apici affixis.—Epiphyta (ex cl. Friedrichsthal!), acaulis, florifera ad  $0.5^{\text{m}}$  alta. Folia e vagina ovali, margine nunc integerrima nunc dissite spinulis parvis, patentibus aucta, praesertim dorso adpresse allutaceo-lepidota in laminam ensiformem producta, saepius  $0.6^{\text{m}}$  vel paullo ultra longa, submembranacea vel tenuiter chartacea, apice longius breviusve acuta, spinulis haud ultra  $1^{\text{mm}}$  longis praedita vel interiora fere subinermia, interiora saltem apicem versus pulchre rubentia, subglabra. Inflorescentia multiflora, apicem usque e ramulis distiche florigeris, subpatentibus, vix

ultra 55<sup>mm</sup> longis composita, foliis brevior, in scapi gracilis, glabri vel perparce lepidoti, vaginis pulchre rubentibus membranaceis, suberectis, lanceolatis perlongeque acutis, inferioribus margine minutissime spinulosis superioribus integerrimis, paullo lepidotis, internodia superantibus praediti apice elata, ovoidea vel ellipsoidea,  $\pm 0.15^m$  longa, 90<sup>mm</sup> diam. metiens, glaberrima; ramulis conspicue undulatis, 6–10-floris; bracteis primariis infimis anguste lanceolatis, peracutis, ramulos axillares ultra dimidium aequantibus, reflexis; bracteolis florigeris 3.5–5<sup>mm</sup> longis, reflexo-patentibus, submembranaceis, tenuissime solum saepiusque obscure venoso-lineatis, glabris, latissime ovatis breviterque (nec pungenter) acuminulatis, satis concavis. Flores per anthesin secus ramulos stricte erecti, sessiles, 17<sup>mm</sup> longi, glabri; sepalis liberis vel basi minutissime solum connatis, 5.5<sup>mm</sup> longis, apice in aciculum minutissimum, brunneum, dorsalem productis, latere tecto in alam maximam aciculo multo altiore dilatis. Petala 13<sup>mm</sup> longa, ex ungue lineari in laminam angustam, sublanceolatam, peracute in spinulam terminalem transeuntem dilatata, 2<sup>mm</sup> a basi ligulis binis profunde fimbriato-incisis aucta. Stamina petalis paullo breviora, filamentis anguste linearibus, tenuibus, ser. I liberis, ser. II cum petalis peralte (ultra laminæ basin) intime connatis; antheris luteis, fere 3<sup>mm</sup> longis, lanceolatis, utrinque sed praesertim apice acutis, prope medium dorsifixis. Ovarium subglobosum, longitudinaliter sulcatum, ad 7<sup>mm</sup> longum; tubo epigyno subnullo; stylo antheras exacte aequante, gracili; stigmatibus longe divisus, perangustis, laxe spiraliter contortis. Bacca cœrulea!, globosa, *Pisi* magnitudine, sepalis persistentibus tenuiter conice conniventibus coronata; seminibus allutaceis, vix 2<sup>mm</sup> longis.

Isla de Catina, Rio San Juan, Nicaragua,<sup>1</sup> 1839, Friedrichsthal, no. 609, (herb. Vindob.). Rio Jiménez, Llanos de Santa Clara, Comarca de Limón, Costa Rica, alt. 650<sup>ft</sup>, Apr. 1894, J. D. S., no. 4,962.

**Pitcairnia puberula** Mez et Donnell Smith; foliis exterioribus ignotis, interioribus haud petiolatis, anguste lanceolatis, integerrimis, subtus junioribus lepidibus albis pilos magnos simulantibus furfuraceis; inflorescentia simplicissima,

<sup>1</sup>Mr. Hemsley has remarked, that all of Friedrichsthal's plants in the Kew herbarium are ticketed as from Guatemala; and this is the case also with the Vienna specimen above cited. In fact, the collections were made in Nicaragua and Costa Rica.



medium usque laxiuscule, apicem versus dense racemosa, multiflora; foliolis scapalibus internodia longe superantibus; bracteis maximis, triangulo-lanceolatis, infimis flores axillares triplo vel ultra superantibus; floribus pedicellis brevibus crassisque stipitatis; sepalis anguste triangularibus, haud carinatis; petalis eligulatis; seminibus utroque polo tenuiter caudatis.—Imperfecte solum cognita, florifera vix ultra 0.4<sup>m</sup> alta. Folia rosulæ desunt. Scapus validus, erectus, foliis permanifeste brevior, lepidibus araneosis cinereis vel albidis puberulus, dense foliolis iis rosulæ absque dubio æqualibus, anguste lanceolatis, longe peracutis, viridibus, supra glabris subtus junioribus lepidibus albidis pilos magnos simulantibus dense furfuraceis, adultis  $\pm$  perfecte glabris, omnibus erectis internodiisque perlonge superantibus, inflorescentiamque medio fere æquantibus usque ad 18<sup>mm</sup> latis, omnino inermibus instructus. Inflorescentia simplicissima, medium usque laxiuscule apicem versus dense racemosa, paullo infra 0.2<sup>m</sup> longa, 40<sup>mm</sup> diam. metiens, cylindrica apiceque rotundata, multiflora; rhachi recta, haud vel vix angulata, lepidoto-puberula; bracteis inflorescentiæ basin versus persensim in folia scapalia transeuntibus triangulo-lanceolatis longissimeque acutis, erectis, infimis flores axillares triplo vel ultra superantibus, supremis quam sepala subduplo brevioribus. Flores deflorati fructiferi solum cogniti stricte erecti, pedicellis percrassis, lepidoto-puberulis, haud ultra 4<sup>mm</sup> longis stipitati; sepalis subglabris, ad 21<sup>mm</sup> longis, e basi 5<sup>mm</sup> lata in apicem acutam sensim angustatis triangularibus, symmetricis, haud carinatis. Petala (nonne revera, ut ex sicco videtur alba vel lutea?) eligulata. Genitalia ignota. Capsula matura  $\pm$  18<sup>mm</sup> longa, ad  $\frac{5}{8}$  longit. supera, tenuiter conice perlongeque acuta, basin usque dehiscens, seminibus 2.5<sup>mm</sup> longis, fere rectis, utrinque cauda tenui egregiaque appendiculatis.—OBS. Species persingularis, Eupitcairnieis adscribenda sed pedicellis crassis bracteisque infimis saltem perelongatis quam maxime notabilis. Binæ adhuc solum hujus gregis species e Guatemala allatæ mihi cognitæ, quæ petalis eligulatis gaudent, utraque infelicitè imperfecta solum mihi ante oculos. (MEZ.)

Cenaguilla, Depart. Santa Rosa, Guatemala, alt. 4,000<sup>ft</sup>, Sept. 1892, Heyde & Lux, no. 3,879.

**Anthericum apodanthum** Donnell Smith. (Subgenus *HESPERANTHES* Baker.)—Folia radicalia linearia graminoida valde 15–17-nervata, margine vix ciliolato. Scapus sesqui-



pedalis teres glaber ebracteatus. Racemus (in exemplaribus mihi suppetentibus) simplex flexuosus, nodis inferioribus remotissimis. Bracteæ interiores ovatae cuspidatae, exteriores lanceolatae denique subulato-attenuatae. Pedicelli terni in medio articulati. Perianthii segmenta perspicue 3-nervata, interiora in sicco lutea. Filamenta muriculata nunc ovarium aut antheras aequantia nunc eis duplo longiora. Stylus nunc ovarii nunc perianthii longitudinem aequiparans. Capsula oblongo-ovalis perianthio marcido  $\frac{1}{2}$  brevior semina in loculo quoque 9–10 habens.

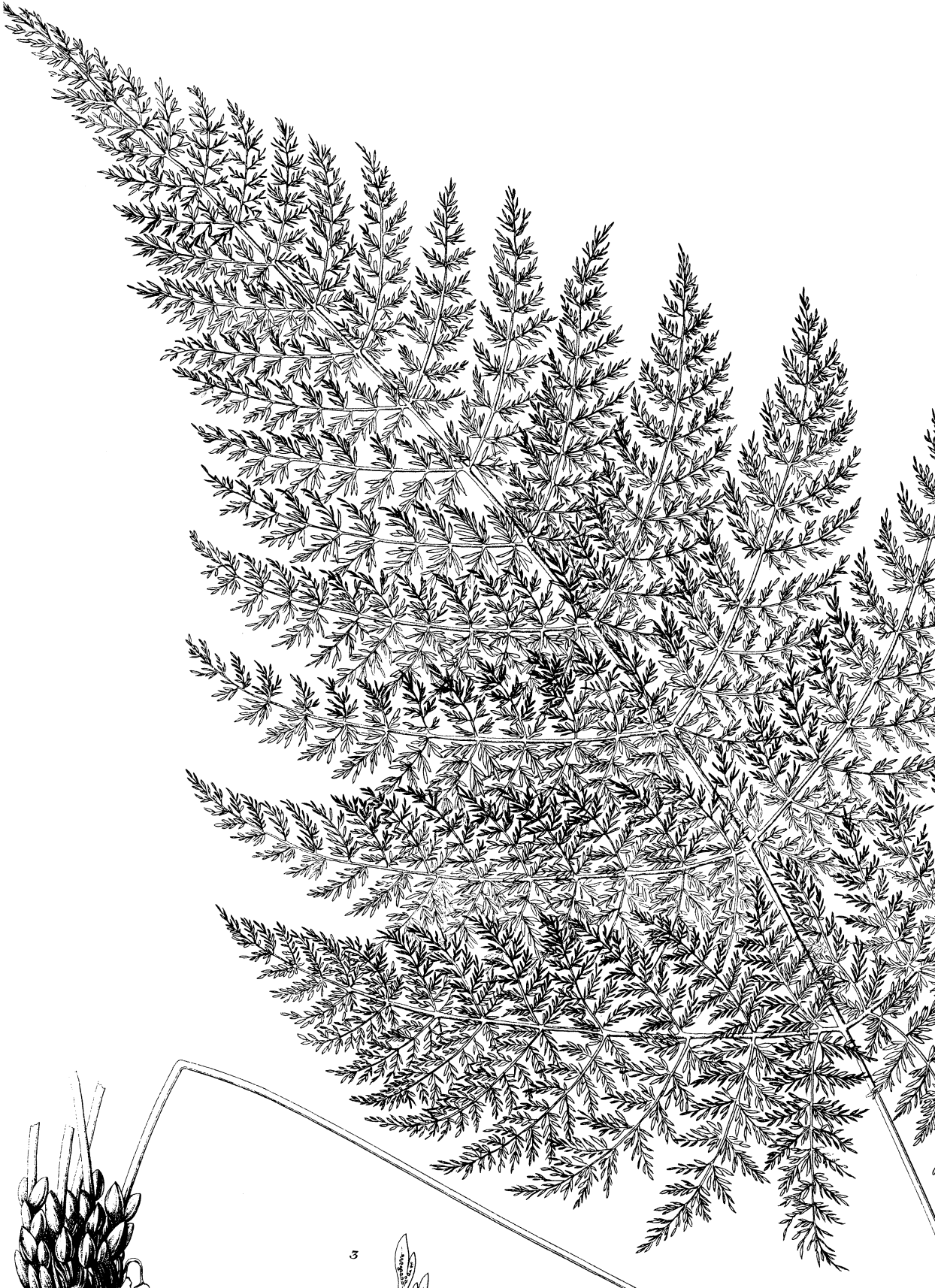
Rhizome not seen. Leaves  $12-15^{\text{in}} \times 2-3^{\text{l}}$ . Raceme  $7-8^{\text{in}}$  long, lower internodes  $1\frac{1}{2}-3^{\text{in}}$  long, exterior bracts at length  $1^{\text{in}}$  long, pedicels  $4-9^{\text{l}}$  long. Perianth  $6-7^{\text{l}}$  long. Anthers  $1\frac{1}{2}^{\text{l}}$  long.—Indicated by Mr. J. G. Baker as undescribed and nearest to his *A. Skinneri*.—San Bartolo, Depart. Zacatepequez, Guatemala, alt. 5,000 <sup>ft</sup>, May, 1890, Heyde & Lux, no. 4,644.

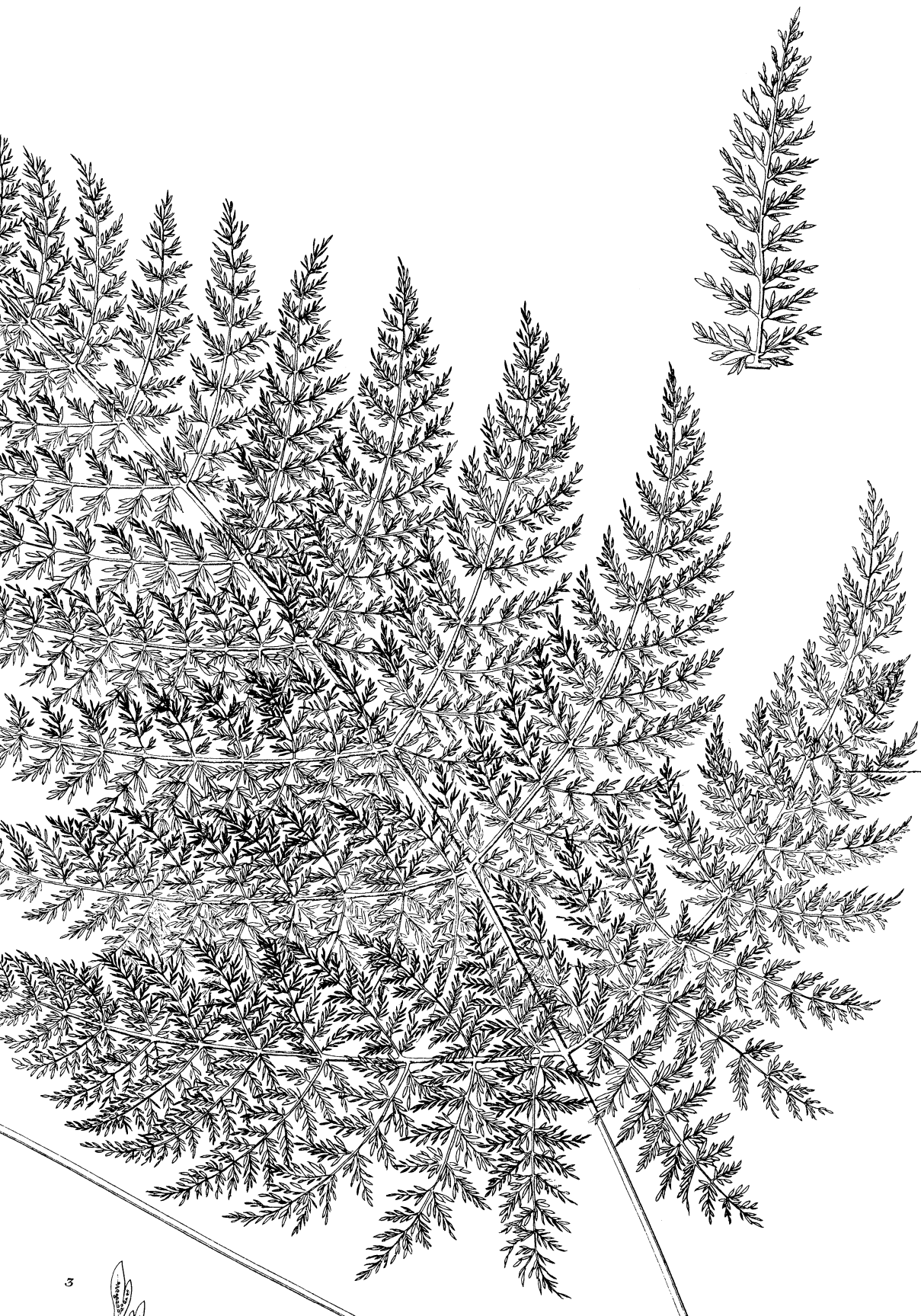
**Gymnogramme sciattraphis** Donnell Smith.—Stipites e caudice brevi crasso caespitosi graciles spithamæi straminei glabri, basi paleacea. Frondes acuminato-ovatae pedales glabrae  $4-5$ -pinnatim decompositae, jugis plurimis confertis, pinnis pinnulisque oppositis e basi truncata subsessili ovatis lanceolatisve, pinnis infimis maximis, pinnulis ser. II rhomboideis  $1-2$ -fidis, ultimis ellipticis deorsum attenuatis plerumque bifurcatis, segmentorum nervio unico infra medium usque ad furcam sorifero.

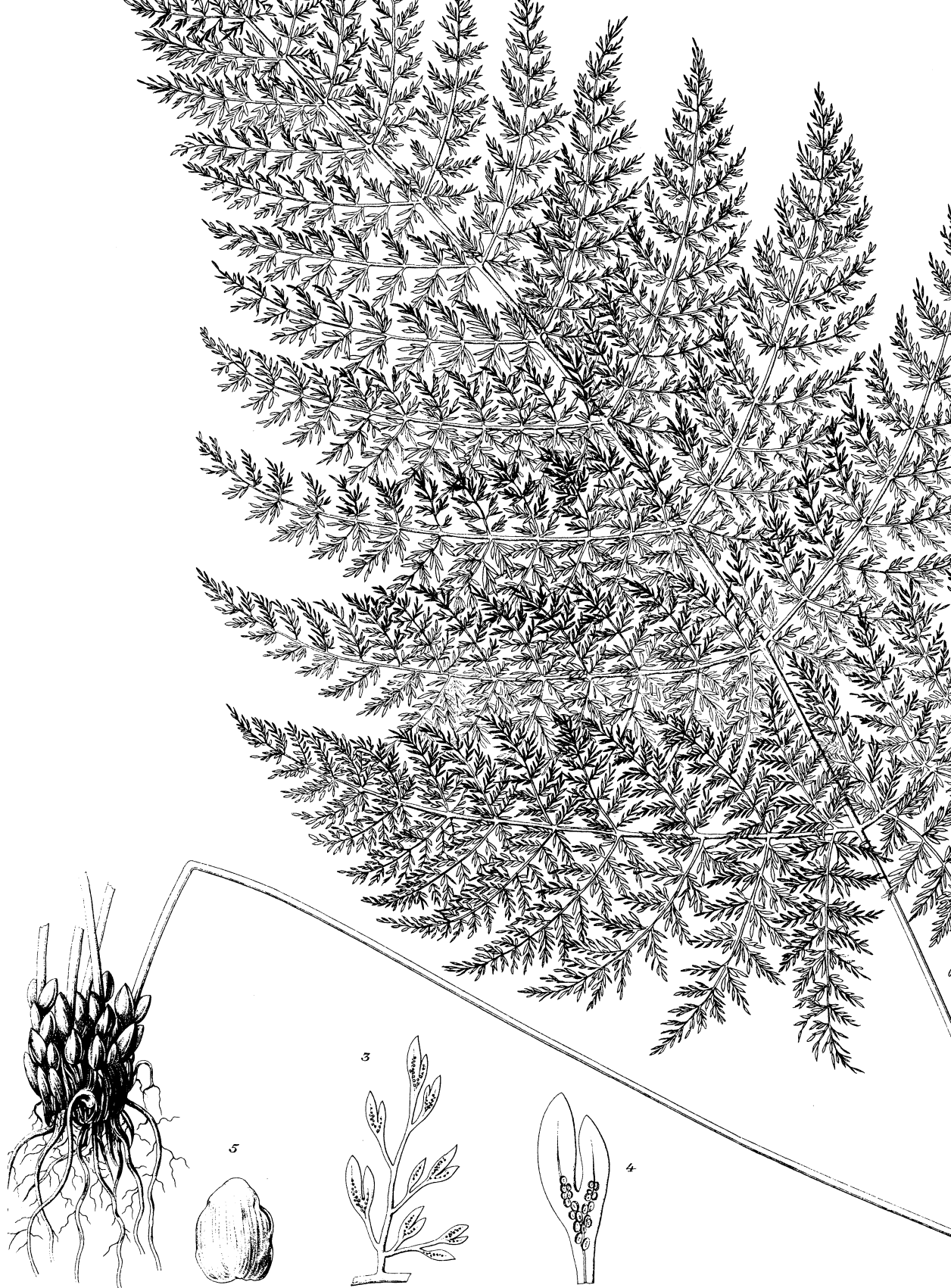
Scales ovate,  $3-4^{\text{l}}$  long, rigid, blackish, imbricating. Stipes and rachises canaliculate. Sterile and fertile fronds similar,  $20-26$ -jugate. Basal pinnæ acuminate-deltoid, spreading, incurved,  $6-7\frac{1}{2}^{\text{in}}$  long,  $15-20$ -jugate; its lower pinnules  $2^{\text{in}}$  long,  $9-12$ -jugate. Segments oblong, acute,  $1-1\frac{1}{2}^{\text{l}}$  long, fruit-dots cylindrical.—To be grouped with *G. chaerophylla* Desv. and *G. schizophylla* Baker, which differ chiefly by absence of caudex and of scales, circumscription and loose pinnation of fronds.—Shaded precipitous banks of Rio Jiménez, Llanos de Santa Clara, Comarca de Limón, Costa Rica, alt. 650 <sup>ft</sup>, Apr. 1894, J. D. S., no. 5,084.

*Baltimore, Md.*

EXPLANATION OF PLATE XXVI.—Fig. 1, frond.—Fig. 2, pinnule.—Fig. 3, pinnule of second order.—Fig. 4, ultimate pinnule.—Fig. 5, scale from base of stipe. (Figure 1 is somewhat reduced; the others are variously enlarged.)







C.E.Faxon, del.

GYMNOGRAMME SCIATRAPHIS Donnell Smith.



B. Meisel, Lith. Boston.

GYMNOGRAMME SCIATRAPHIS Donnell Smith.